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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/821,777

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Glauco P. Tocchini-Valentini

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QUARLES & BRADY LLP  
411 E. WISCONSIN AVENUE  
SUITE 2040  
MILWAUKEE, WI 53202-4497

EXAMINER

SHIN, DANA H

ART UNIT

PAPER NUMBER

1635

MAIL DATE

DELIVERY MODE

07/17/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/821,777	<b>Applicant(s)</b> TOCCHINI-VALENTINI ET AL.	
	<b>Examiner</b> DANA SHIN	<b>Art Unit</b> 1635	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 May 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 4-23 is/are pending in the application.
- 4a) Of the above claim(s) 18-23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 4-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

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## **DETAILED ACTION**

### ***Status of Application/Amendment/Claims***

This Office action is in response to the communications filed on May 12, 2009.

Currently, claims 1 and 4-23 are pending. Claims 18-23 have previously been withdrawn as being drawn to non-elected inventions. Accordingly, claims 1 and 4-17 are under examination on the merits in the instant case.

The following rejections are either newly applied or are reiterated and are the only rejections and/or objections presently applied to the instant application.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Response to Arguments and Amendments***

#### **Withdrawn Rejections**

Any rejections not repeated in this Office action are hereby withdrawn.

#### **Maintained Rejections**

#### ***Claim Rejections - 35 USC § 103***

Claims 1 and 4-17 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Abelson et al., Diener et al., and Reyes et al. for the reasons of record as set forth in the Office action mailed on November 17, 2008 and for the reasons stated below.

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Applicant's arguments filed on May 12, 2009 have been fully considered but they are not persuasive. Applicant argues that the claimed invention was neither known nor predictable at the time of filing and therefore the claims are unobvious over the teachings of the prior art. In so arguing, applicant asserts that the teachings of Abelson et al. relied on by the Office in the instant rejection are teachings of the Fabbri et al. reference. (reference number 41) cited by Abelson et al. Contrary to applicant's argument, the teachings of Abelson et al. that a eukaryotic or archaeal tRNA splicing endonuclease is capable of targeting any target comprising a conserved structural motif are not purely based on the teachings of Fabbri et al., as evidenced by the fact that Abelson et al. merely used the Fabbri et al. reference as an additional "support" for their conclusion that both eukaryotic and archaeal endonucleases utilize the same target (or active) sites by the same mechanism: cleaving or splicing target RNA "in a precise and conserved spatial orientation". See page 12688, last paragraph. In addition to the similarity in cleaving activity and mechanism between eukaryotic and archaeal endonucleases, Abelson et al., independent from Fabbri et al., taught that archaeal tRNA endonuclease "relies solely on the BHB motif". See page 12685, last paragraph. Furthermore, Abelson et al. taught the mechanism for catalyzing the first step in "splicing" is conserved between eukaryotic and archaeal endonucleases and therefore proposed a "unified model of tRNA splicing", wherein the "splicing" involves both the 5'-splice site cleavage and the 3' site cleavage, wherein each splice site contains a specific motif consisting of two loops of three bases separated by a four-base pair helix. See pages 12685-12686. Abelson et al. also taught, independent of Fabbri et al., that both eukaryotic and archaeal endonucleases have two active sites that are spatially arranged in a conserved manner, wherein each active site is independently involved in the 5' splice site cleavage and the 3' splice site cleavage. See page

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12688. Further, Abelson et al. concluded, in view of the similar findings of other researchers, namely Fabbri et al. who published almost identical observation on the conserved substrate cleaving mechanism involving the BHB motif by the eukaryotic and archaeal endonucleases having two active sites about one month prior to the publication of Abelson et al., that the eukaryotic tRNA splicing endonuclease has the “ability to recognize and cleave the primitive consensus substrate”, wherein the primitive consensus substrate is a “universal substrate containing the BHB motif”. See page 12688, last paragraph. Taken together, the disclosure of Abelson et al. in and of itself provides sufficient guidance to one of ordinary skill in the art that one can use a eukaryotic tRNA splicing endonuclease as a target RNA cleaving molecule, as long as the target RNA contains the “primitive consensus” BHB motif. Hence, applicant’s sole reliance on and discussion of the Fabbri et al. publication, which was not applied in the instant rejection, and applicant’s assertion that the co-authors of the work disclosed in the Fabbri et al. publication did not know the claimed invention are irrelevant. Similarly, applicant’s argument that the claimed invention is directed to the inventors’ “surprising finding” that eukaryal tRNA endonucleases can cleave transformed structures having only a BHB motif is a mere allegation unsupported by objective evidence. Again, the fact that eukaryotic tRNA endonucleases have the “ability to recognize and cleave the primitive consensus substrate” was already recognized in the art as explicitly stated in Abelson et al. As such, applicant’s argument that Abelson et al. do not teach the “surprising finding” is both misleading and irrelevant.

Applicant argues that Diener et al., and Reyes et al. do not cure the deficiency in Abelson et al. and therefore the claims are unobvious over the combination of the references. Contrary to applicant’s argument, there is no alleged deficiency in the Abelson et al. because they clearly

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taught the “ability” of eukaryotic tRNA endonucleases to “recognize and cleave the primitive consensus substrate”.

Since applicant's arguments do not clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited, and since they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references, this rejection is maintained.

### ***Conclusion***

No claim is allowed.

This application contains claims 18-23 drawn to inventions nonelected with traverse in the reply filed on March 8, 2007. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANA SHIN whose telephone number is (571)272-8008. The examiner can normally be reached on Monday through Friday, 7am-3:30pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James (Doug) Schultz can be reached on 571-272-0763. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Dana Shin  
Examiner  
Art Unit 1635

/J. E. Angell/  
Primary Examiner, Art Unit 1635